

Online Project Planning Template

Project Title: American Scientists: An Endangered Species?

Grade Level: Grades 4-8

Content Area(s) Targeted: Language Arts and Science

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Standards Targeted	Project Overview																		
<p>Standards:</p> <p style="text-align: center;">National Standards</p> <p>National Science Standards Students develop understanding about:</p> <ul style="list-style-type: none"> Science and technology in society. Science as a human endeavor Nature of science History of science Grade Level Content Standards <p>IRA/NCTE Standards for English Language</p> <ul style="list-style-type: none"> Students conduct research on issues and interests by generating ideas and questions and by posing problems. They gather, evaluate, and synthesize data from a variety of resources to communicate their discoveries in ways that suit their purpose and audience. Students apply a wide range of strategies to comprehend, interpret, evaluate and appreciate texts. <p>ISTE NETS for Students</p> <ul style="list-style-type: none"> Students use technology tools to enhance learning increase productivity, and promote creativity. Students use telecommunications to collaborative, publish, and interact with peers, experts, and other audiences. Students use technology to locate, evaluate, and collect information from a variety of sources. <p>National Council for Social Studies Standards</p> <ul style="list-style-type: none"> Social studies programs should include experiences that provide for the study of the ways human beings view themselves in and over time. <p>Social Emotional Needs: <i>This project addresses the following social emotional needs.</i></p> <ul style="list-style-type: none"> Belonging- part of a team that is solving a problem, collaboration Mastery- Goal setting, authentic learning, choices 	<p style="text-align: center;">Engaging Scenario</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Situation</td> <td>Less and less Americans are going into the field of Science</td> </tr> <tr> <td>Challenge</td> <td>Inspire students to become scientists</td> </tr> <tr> <td>Student Role</td> <td>Themselves</td> </tr> <tr> <td>Audience</td> <td>Students across the country</td> </tr> <tr> <td>Product or Performance</td> <td>Stars of Science Celebrity wiki</td> </tr> </table> <p style="text-align: center;">Task Outline</p> <p>Task 1: Analyze the Problem: Read articles to analyze the problem. What is the problem and what is the cause? Is it really a problem?</p> <p>Task 2: Conduct Student Career Survey and Analyze Results. Do the data support/contradict what the articles are telling us?</p> <p>Task 3: Read and research. Who are the scientists? What kind of people are scientists?</p> <p>Task 4: Develop the Stars of Science wiki</p> <p style="text-align: center;">Engaging Scenario Motivation Scale</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="4" style="text-align: right; padding-right: 10px;"> High </td> </tr> <tr> <td style="width: 25%;">Simulation of a task Audience is classroom or teacher</td> <td style="width: 25%;">Simulation of a Real Life Task Audience is classroom or teacher</td> <td style="width: 25%;">Authentic Task Authentic Audience</td> <td style="width: 25%; background-color: #e0e0e0;">Authentic Task Authentic Audience Community Service Project</td> </tr> </table> <p>Big Ideas: This project leads students to realize the following Big Ideas.</p> <ul style="list-style-type: none"> Science is all around us. Scientists are extremely valuable to our society. Scientists solve problems and make a difference. Problems are solved through perseverance and mistakes. Science is an exciting field. The results of the work of scientists is everywhere in our world. The scientific method and reading comprehension require the same types of thinking. 	Situation	Less and less Americans are going into the field of Science	Challenge	Inspire students to become scientists	Student Role	Themselves	Audience	Students across the country	Product or Performance	Stars of Science Celebrity wiki	High				Simulation of a task Audience is classroom or teacher	Simulation of a Real Life Task Audience is classroom or teacher	Authentic Task Authentic Audience	Authentic Task Authentic Audience Community Service Project
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- Generosity- contributing to the solution of a problem
- Independence- choices

21st Century Skills: *This project addresses the following 21st Century skills.*

- Learning and Thinking Skills
- ICT Literacy

Technology: *This project uses the following technology.*

- Wikis
- Discussion Boards
- Collaborative Spreadsheet

Essential Questions

- What is the role of scientists in society?
- How does conducting science experiments improve my reading?
- Why is it important to study the lives of scientists?

Activity 1: Analyzing the Problem

Description: Students will read several articles addressing the problem and analyze the problem using a graphic organizer

Standards Targeted:

Concepts, Understandings and Skills		Effective Teaching Strategies Used (Category and Specific Tool)		
Concepts (Know)	Skills (Able to Do)	X Identifying similarities and differences __ Summarizing and note taking __ Reinforcing effort and providing recognition X Nonlinguistic representations X Cooperative learning __ Setting objectives and providing feedback		__ Generating and testing hypotheses __ Cues, questions, and advance organizers Other:
Organizational patterns in text Evidence	Identify (organizational patterns in text) Interpret (text) Use (evidence to draw and support conclusions)			
Big Idea(s) (Big Ideas this task will develop) <ul style="list-style-type: none">Scientists are extremely valuable to our society.Scientists solve problems and make a difference.		Differentiation Strategies Articles at different reading levels Working in heterogeneous groups Underline key words for students that signal problem, cause, solution		
Essential Question(s) (Essential questions this task addresses): <ul style="list-style-type: none">What role do scientists play in society?		Level of Blooms (Highlight Those Addressed)		
Demonstration of Knowledge (What students will actually do or produce in this task related to the concepts, understandings, and skills) <ul style="list-style-type: none">Analyze articles with the Analyzing the Problem Organizer.Compare research articles from a variety of perspectives using a graphic organizerDraw conclusions as to whether or not the scientist problem is real.		Create (Put together ideas or elements to develop an original idea)	create, design, construct, plan, compose, invent, produce, devise, make, transform, formulate	film, story, project, new game, song, product, performance, advertisement, plan
Evidence of Learning-Assessments (How we will know what students know and are able to do as related to the concepts, understanding, and skills) <ul style="list-style-type: none">Organizers and discussions		Evaluate (Judge the value of ideas, materials, and methods by applying standards and criteria)	judge, hypothesize, verify, assess, justify, rate, prioritize, determine, select, decide, value, choose, forecast, estimate, critique, support, draw conclusions	debate, panel, report, verdict, conclusion, persuasive, speech, investigation
		Analyze (Examine critically, break information down into its component elements)	compare , contrast, classify, critique, deduce, differentiate, distinguish, question, infer, investigate, organize, deconstruct, attribute, outline, integrate, categorize, analyze	survey, database, abstract, report, graph, spreadsheet, checklist, chart, outline
		Apply (Use what you have learned)	demonstrate, construct, record, use, diagram, revise, record, reformat, display, practice, simulate, illustrate, write, draw, dramatize, model, implement, sequence, incorporate	illustration, simulation, role-play, demonstration, presentation, journal, interview, model

Big Idea(s) (Big Ideas this task will develop)

- Scientists are extremely valuable to our society.
- Scientists solve problems and make a difference.

Essential Question(s) (Essential questions this task addresses):

- What role do scientists play in society?

Demonstration of Knowledge (What students will actually do or produce in this task related to the concepts, understandings, and skills)

- **Analyze** articles with the Analyzing the Problem Organizer.
- **Compare** research articles from a variety of perspectives using a graphic organizer
- **Draw conclusions** as to whether or not the scientist problem is real.

Evidence of Learning-Assessments (How we will know what students know and are able to do as related to the concepts, understanding, and skills)

- Organizers and discussions

Debrief/Reflection: (How will students be involved in thinking about their learning)

- Discussion with guiding questions and next steps.

Resources/Materials Needed:

- Analyzing the Problem Organizer
- Lesson
- Oil Spill Threatens Wildlife
- Scientist News Articles

Understand (Show comprehension of information)	explain, locate, summarize, describe, identify, discuss, report, paraphrase, restate, retell, show, outline, rewrite	summary, quiz, label, outline, retelling, examples, oral and written responses, discussions
Remember (Recall facts and specific information)	tell, list, define, label, recite, memorize, repeat, find, name, fill in, recall, retrieve, locate, name	quiz, definition, fact, test, labeling, worksheet, reproduction, lists

Costa's Model of Intellectual Functioning in Three Levels

Level One questions focus on gathering and recalling information; Level two questions on making sense of gathered information; and Level Three questions on applying and evaluating information.

Level	Questions
Level Three- applying a principle evaluating hypothesizing imagining judging predicting speculating	What conclusions can we draw? What does this problem have to do with us? How might we part of the solution?
Level Two- analyzing comparing contrasting grouping inferring sequencing synthesizing	How do you know it is a problem? What evidence supports that? What do you notice? Are there any similarities between articles?
Level One defining describing identifying listing naming observing reciting scanning	What is the problem? What is the cause?

Arthur Costa's Model of Intellectual Functioning in Three Levels
from *Developing Minds: A Resource Book for Teaching Thinking*